REMARKS

Reconsideration and allowance of the above-identified application are respectfully requested. By the present Amendment, claim 9 has been amended to correct a typographical error. Claims 9 has also been amended to clarify the language "empty". Claims 10 and 11 have been amended to remove the recitation "intended for" objected to in the Office Action. New claims 24-33 have been added to provide a more complete scope of protection for the invention. Withdrawn claims 1-8, 12-17 and 20-23 are canceled herein. Applicants reserve the right to pursue prosecution of these claims in a divisional application.

In the Office Action, claims 9-11 are rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent application publication no. 2001/0013123, to Freeman et al (hereinafter referred to as Freeman et al). Claims 18 and 19 are rejected under 35 U.S.C. § 103(a) as being obvious over Freeman et al in view of U.S. Patent No. 5,724,521, to Dedrick (hereinafter referred to as Dedrick).

The Applicant respectfully traverses these rejections. As discussed in more detail below, the present invention packetizes data in a broadcast data stream into content blocks, reference content blocks and floating reference content blocks, and is not to be confused with a stream of bits such as an MPEG bit stream. The broadcast data stream has rich in-band or out-of-band metadata that is used to select content for different users for insertion into streams of content received by them. Reference content blocks and floating reference content blocks are preferably empty with regard to content but are used to reference other content blocks and for content substitution to allow seamless playback transition between different blocks of content at respective user devices, as stated on page 6, line 34 through page 7, line 2 of the originally filed application. The references cited in the Office Action to reject the claims do not disclose or suggest such packetized data with metadata.

9

More specifically, the present invention relates to a system for transmitting streams of content comprising metadata, and substitution of dynamically selected content into a content stream, among other aspects. Fig. 3 depicts exemplary streams of content which comprise blocks of content in accordance with an aspect of the present invention. A stream is preferably a continuous series of content blocks 41 and reference content blocks 42 that are associated with a content provider 14 such as a radio station. In accordance with another aspect of the present invention, metadata 47 is provided with the stream of content. The metadata can be transmitted in-band or out-of-band with respect to the content. The content blocks are uniquely identifiable as indicated in the Table on page 8 of the application, and can be audio, video, text, data, graphics, and so on, as stated on page 2, lines 13 and 14 of the application.

Applicants respectfully assert that the metadata employed by the present invention is more rich and versatile than metadata used in other data transport applications. Varying amounts of metadata 47 are associated with each entity (e.g., content owner, content provider, content distributor and user), security information, content block and transaction. A content block can have content block permissions associated therewith, that is, metadata which defines what can be done with a content block. For example, a content block can comprise a "copy restriction" flag indicating that the content cannot be recorded or retained by the user device 12. The flag can also indicate that a content block is to be used in place of another content block. Some exemplary metadata types include, but are not limited to, the duration of the content block (e.g., number of data bytes at the rate of transmission or time elapsed), its title, type of block, security options, a description of the content, a description of associated products, a description of the content owner, a description of user rights, and so on, as stated on page 5, line 27 through page 6, line 3 of the application. A specialized metadata is associated with specific business processes to enable bidding among different e-commerce providers to supply the associated products and services, content substitution based on user or user groups, e-commerce and other processes.

With continued reference to Fig. 3, a stream of content can comprise reference content blocks (e.g., block 42 having a fixed reference to block 43) and floating reference content blocks (e.g., block 44 which is resolved to a block 45 using a process described in connection with Fig. 5), in addition to the blocks of content 41 and 46 with which metadata 47 is associated to define duration, costs and other information. A reference content block (e.g., block 42) is an empty content block preferably having only metadata that refers to a second, different content block or reference content block (e.g., block 43). The metadata in a reference content block can override some of the metadata in a content block that is pointed to and is resolved by the distribution router 16. A floating reference content block (e.g., block 44) is a reference content block that does not yet point to a content block or reference content block. The metadata in a floating reference content block is preferably resolved by a market server 20, as indicated in Fig. 1.

Applicants respectfully assert that Freeman et al does not teach or suggest the use of a reference content block and a floating reference content block as recited in claims 9 and 25. For example, Freeman et al does not teach or suggest use of an empty floating reference content block in a data stream that is resolved into a block that is no longer floating, that is, a reference content block is substituted therefor with reference to content selected for a user using metadata. In fact, Freeman does not teach or suggest content blocks or metadata as claimed. In accordance with the present invention, content blocks are individually identified, as exemplified by the unique identifiers for content blocks in the "Content Block (Specified)" column in the Table commencing on page 8, line 30 of the application, and capable of being referred to by other content blocks. By contrast, the packets depicted in Fig. 3 of Freeman et al do not refer to each other and do not comprise unique block identifiers as claimed. The Office Action states that paragraph [0047] of Freeman et al purportedly teaches content blocks as claimed. Paragraph [0047] of Freeman et al merely states that a multiplexed data stream can comprises customized programming content but provides no suggestion as to employing a content block scheme as claimed whereby blocks can refer to one another and be

substituted for one another. The Office Action further cites paragraphs [0027], [0033] and [0034] of Freeman et al for purportedly teaching content blocks, reference content blocks and floating reference content blocks, as claimed. Paragraph [0027] merely discloses storage of programming files on a storage server, which has nothing to do with content blocks, reference content blocks and floating reference content blocks. The switching between programming segments described in paragraphs [0033] and [0034] of Freeman et al does not disclose or suggest reference content blocks and floating reference content blocks that refer to other blocks and the dynamic resolution of them to select and substitute content based on, for example, user preferences. Freeman et al merely uses splice points that do not disclose or suggest the present invention as explained in further detail below.

In addition, the reference to paragraph [0089] of Freeman et al in the Office Action to teach metadata as claimed is incorrect. According to the present invention, metadata is transmitted (e.g., in-band or out-of-band). Paragraph [0089] of Freeman et al discloses donut files that are stored and not transmitted. Also, these files are not disclosed as comprising metadata in accordance with the present invention (e.g., data specifying at least one of duration of a content block, number of bytes in a content block, title of content, type of block, security options, security options relating to at least one of encryption, decryption and integrity of the content, a description of the content, format of the at least one of content in a content block selected from the group consisting of audio, video, text, graphics, and data, a description of associated products, a description of the content owner, a description of user rights, unique block identifiers, and a description of how content can be used).

As will be described in more detail below in connection with Fig. 5, a number of aspects of the CDS 10 improve e-commerce capabilities of a content distribution system. The metadata architecture associated with content blocks and reference content blocks permits blocks of content to refer to different blocks with content depending on which user is requesting the content. The CDS 10 provides seamless playback transition between different blocks of content at respective user devices 12. The CDS system 10

provides communication between the user devices 12 and the market server 20 to allow for information about consumer behavior to be collected, aggregated, stored and analyzed by the market server 20. Such information allows the market server 20 to perform real-time spot market functions whereby floating reference content blocks in streams provided by a content provider 14 to users can be substituted with different content (e.g., advertisements), depending on the user.

The use of floating reference content blocks is described in more detail in connection with Fig. 5 relating to content substitution based on user(s) preferences or profile(s). With reference to block 80 in Fig. 5, a broadcast station 18 places a floating reference content block into a broadcast stream. Metadata embedded in the stream or sent out-of-band specifies the duration and other information defining how the spot in the stream will be placed within the market. When the metadata is received by the market server 20, the market server 20 commences processing of the spot (block 82). The spot is hereinafter referred to as an advertisement spot for illustrative purposes. The market server 20 locates an optimal match between the profile of the broadcast station 14, the advertisement spots, the user(s) and available substitute content (advertisement) (block 84). To perform the content substitution process, the marker server 20 compares the metadata information contained in the floating reference content block, metadata about the broadcast station, metadata about the user, and the stored metadata associated with each possible content block (e.g., advertisement) that can be substituted. The metadata about each possible content block is provided to the market server 20 when the content blocks are registered as on-demand content blocks. Using this metadata, a matching process can be executed that compares the different parts of the metadata to determine an optimal match from which the content block to be substituted is determined. The search for an optimal match is completed for each user, groups of users or for the entire stream, depending on guidelines specified in the metadata. When an optimal match or matches are found, the floating reference content blocks are resolved into blocks which are no longer floating and which contain references to the content blocks of the selected substitute content (e.g., advertisement) (block 86). Freeman et al

does not teach a system that operates in this manner. By contrast, Freeman et al teaches splicing of disparate program segments at splice points (e.g., paragraph [0051] and splice points 336 in Fig. 3 of Freeman et al) which are not reference or floating reference content blocks in a data stream.

With continued reference to Fig. 5, when metadata in the selected advertisement or substitute content reaches the distribution router 16, the distribution router 16 looks up the reference content block indicated therein and opens up the corresponding stream(s) associated with the selected advertisement(s) (block 88). When the metadata associated with the selected advertisement reaches the user device 12, the user device looks up the floating reference content block that resolves to the second reference content block. When the user device looks up the second reference device content block, a content block is received with the advertisement specifically targeted at the user device (block 90). The stream to the selected advertisement is then opened by the user device (block 92). The user device then switches over to or cross-fades over to the advertisement stream and commences playing back the ad (block 94). Thus, the splicing as taught by Freeman et al does not teach the resolution of content blocks to allow seamless playback transition between different blocks for respective user devices in accordance with the present invention.

In summary, with regard to the rejection of claims 9-11 under 35 U.S.C. § 102(e) in view of Freeman et al, the Applicants respectfully submit that Freeman et al does not teach or suggest content blocks, reference content blocks, floating reference content blocks as claimed. For example, Freeman et al does not disclose or suggest a stream having a type of block that is empty of content and later resolved with a reference to selected content. By contrast, a splice server merely splices disparate program segments in a program stream for delivery to a user. As shown in Fig. 3 of Freeman et al, splice points 336 are not blocks within a stream to be substituted with another block, and are not blocks with metadata. As described in paragraph [0051] of Freeman et al, splice points are identified via splice point flags and counters within fields of selected packets. In addition, Freeman et al does not disclose logical content blocks that refer to other

14

content blocks in a broadcast data stream, as recited in claim 10. Accordingly, withdrawal of this basis for rejecting claims 9-11 is respectfully requested.
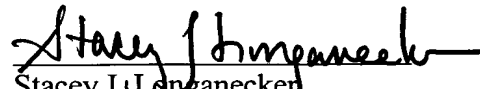
With regard to the rejection of claims 18 and 19 under 35 U.S.C. § 103(a) over Freeman et al in view of Dedrick, Dedrick is relied on for purportedly teaching charging of a fee to an advertiser based on a consumer scale match process. Dedrick does not overcome the deficiencies of Freeman et al. Accordingly, withdrawal of this basis for rejecting claims 18 and 19, which depend from claim 9 and 18 respectively, is requested.

New claims 24, 25 and 31 have been added to provide a more complete scope of protection for metadata and support therefor can be found on page 5, line 33 through page 6, line 3 and on page 4, lines 17-18 of the originally filed application. New claim 27 is directed to the aspect of metadata wherein blocks can refer to different blocks for transition therebetween at different user devices, as described on page 6, line 34 through page 7, line 2 of the application. New claims 26 and 31 are directed to resolving reference content blocks and/or floating reference content blocks, as described on page 11, lines 19-29 of the application. New claims 28-30 have been added to provide a more complete scope of protection for generation of a content steam packetized with logical content blocks, as exemplified in Fig. 3. The use of a stream packetized with logical content blocks such as content blocks, floating reference content blocks and reference content blocks is not to be confused with transport layer packetization such as MPEG or IP transport. In accordance with an aspect of the present invention, a stream can have floating reference content blocks that are empty of content and are later resolved into blocks, which reference content selected for the user and are substituted for the floating reference content block in another stream opened for the user. In addition, as recited in claim 28, the metadata is rich, as compared with metadata in other applications, to allow dynamic substitution of content that is more highly-tuned than existing broadcast delivery systems. New claims 32 and 33 and the recitation of block identifier in claims 24, 25 and 31 are exemplified by the Table beginning on page 8, line 30 and the text on page 9, lines 9-24 of the originally filed application.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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